Syllabus 280D – Distributed Algorithms and Block-Chains

Eli Gafni Spring 2019

A third to half of the course will be the Traditional 280D (Distributed Algorithm) intermingled now with Block-Chain permission-less consensus.

The topic covered not necessarily in this order:

1. Models of Distributed Computation
2. Why deterministic algorithms for consensus is impossible in asynchronous setting
3. Byzantine agreement
5. Probabilistic consensus algorithms
6. The Stellar open membership consensus
7. Nakamoto Consensus: Bitcoin proof of work
8. Proof of stake consensus: Etherum, Algorand
9. DAGS: iota
10. Zcash
11. Smart Contracts
12. More topics as the course evolves.

There will be HWs with participants rotating as readers.
There maybe midterm to keep participant on their toes, in case laxity is sensed 😊.
In lieu of final ½-1 hour topic presentations at the 10th week and Finals week.